REMARKS

Claims 1-18 are pending in the present application. The Office Action and cited references have been considered. Favorable reconsideration is respectfully requested.

Claim 14 has been amended according to the Examiner's suggestion to overcome the informality noted in the objection. Withdrawal thereof is respectfully requested.

Claim rejections — 35 USC §112

Claims 1-3, 5 and16, as amended, are deemed to be free of any of the indefiniteness objections contained in the office actions.

The terms "which may occur" have been changed to "occurring" in claims 1 and 16.

The term "possible" has been deleted from claim 1-3, 5 and 16.

In the expressions:

- "the structure of the program",

- "the execution path of ...",

- "the computation of said ...",

"the" has been deleted or replaced by "a".

In " (...) able to deal with particular operations, particular values, at particular(...)", "of data" has been added after "values" so that "the values of data" has then sufficient antecedent basis.

In "the states and data handled by the program", "of the program" has been added after "states" so that this phrase is more clearly anticipated by " (...) able to deal with

particular operations, particular values of data, at particular program points and in particular

states of the program."

Claims 4, 9 and 10, have been amended solely to remove the parenthesis, and

replace them by commas. No change in scope is intended; the amendment is solely to

conform to the U.S. practice of not using parenthetical phrases in claims.

For the same reasons, claims 4, 6-14, 18 and 18, as respectively claim 1 and 16,

are believed to be free of any of the indefiniteness objections contained in the Office Action.

Claim rejections — 35 U.S.C. §101

Claim 15, has been amended to recite a method for distribution of applications.

As amended, claim 15 is deemed to overcome rejection under 35USC§101.

Claim rejections — 35 U.S.C. §102

Claims 1-18 were rejected under 35 U.S.C. §102(e) as being anticipated by

Ramaswamy (U.S. Patent Application Publication No. 2004/0088587).

Claim 1 recites a method for determining the operational characteristics of a

program, comprising a verification procedure comprising the following steps:

a first step comprising expressing the operational characteristics of the

program as functions dealing with occurrences or sequences of occurrences of events

occurring during executions of the program, these events being able to deal with particular

operations, particular values of data, at particular program points and in particular states of

the program, determining a level of precision with which these characteristics must be

determined, determining a set of particular contexts of execution in which the program will

always be executed, and determining operational specificities of a set of platforms on which

the program will be executed,

a second step of estimation, by program analysis, and in consideration of the level of precision, of the set of particular contexts of execution and of the operational specificities of platforms, of information relating to the structure of the program, the execution paths of the program and to the values of data, at various points of the execution paths and under different execution conditions, of the states of the program and data handled by the program, and

a third step for determining the operational characteristics, by means of the information extracted by the program analysis, by computation of the functions on the occurrences or particular sequences of occurrences of particular operations, dealing with particular values, at particular points of the program, in particular states of the program, for the set of execution paths determined by analysis. This is not taught, disclosed or made obvious by the prior art of record.

Ramaswamy relates to:

- an automated method of user identification (see *e.g.*, Ramaswamy claim 21),

- an apparatus for use in performing user authentication (see *e.g.*, Ramaswamy claim 1), and

- a user authentication system (see *e.g.*, Ramaswamy claim 13).

Then Ramaswamy does not recite:

- a method for determining the operational characteristics of a program,

- a method for distribution of applications (...), nor

- a system for multi-application execution (...).

Specifically, Ramaswamy relates to methods and apparatus for providing dynamic user authentication. Thus, it relates to verifying that a particular end user is

authorized to use a particular system or program. It can be seen in paragraph [0051] for example, that one possible verification method is voiceprints, and another is fingerprints as discussed in paragraph [0050]. Fig. 7 shows an example verification session between a verification client device and a verification server. See paragraphs [0108]-[0121], which describe the steps the user (*i.e.,* a person) must take, using the verification client device, to be verified by the verification server and thus to be accepted by the verification server as an authorized user. The verification server uses a verification policy and a user model to determine the verification objects, *e.g.,* date of birth, and current bank balance, to test whether the user can be accepted.

In contrast, the present invention relates to a method for determining operational characteristics of a program. It provides a method and a system for implementing the method to guarantee that applications proposed by a server for execution, observe validity criteria associated with platforms for executing these applications. For example, using the inventive method and system, it is possible to determine whether a particular application which is sought to be used on a smart card, would meet the security criterion applicable to such smart cards, such as that the "DES" key could not be less than 128 bits in length and that, because of inoperability concerns, the application does not use "RSA" keys longer than 1024 bits because the target smart card platform could not handle such a long "RSA" key. See, application, page 3, lines 15-28.

The methods taught by Ramaswamy would not be applicable to determining whether a particular computer application could be run on a target platform, as is the object of the present invention; they relate instead to whether a particular (human) user is authorized to use a particular system or program (see paragraph [0055], such programs to which a user seeks access include banking applications, travel applications and e-mail applications), as

verified by their fingerprint, voice print, or other identifying information such as bank
balance, etc.

The present invention relates to a method which may be implemented to achieve
a system for executing multiple applications ensuring that the applications observe given
validity criteria (page 9, lines 26-29); it does not relate to, as Ramaswamy does, methods for
ensuring that particular human users are authorized to use particular programs, using
characteristics such as fingerprints, voiceprints, etc.

The present invention also applies to automatic filtering of a set of programs
relative to a set of given validity criteria, where the claimed operational characteristics
represent validity criteria. The claimed determination step thus ascertains either that the
program is valid because it observes each of the criteria, or is invalid because at least one of
the criteria cannot be observed. Page 10, lines 1-5. In contrast, Ramaswamy teaches only
determining whether a particular human user can pass certain tests that would authorize
him/her to use a particular program or set of programs.

Applicant respectfully submits that none of the claimed steps are found in
Ramaswamy. For example, Ramaswamy does not disclose expressing operational
characteristics of any programs as functions dealing with occurrences of events which may
occur during executions of the program; cited paragraph [0043] discloses the structure of the
verification server 104 and verification client device 102. The verification engines 114-1
through 114-N each operate on a given verification type, e.g., a fingerprint verification
engine may operate on a particular fingerprint, and a knowledge verification engine may
operate on different types of challenge-response questions. See paragraph [0050].

Ramaswamy also does not disclose estimation by program analysis of the set of
particular contexts of execution and the set of operational specificities of platforms of

information relating to the structure of the program, the execution paths of the program and to

the values of possible data at various points of the execution paths and under different

execution conditions, of the states and data handled by the program.

Ramaswamy also does not disclose determining the operational characteristics,

by means of the information extracted by the program analysis, by computation of the

functions on the occurrences or particular sequences of occurrences of particular operations,

dealing with particular values, at particular points of the program, in particular states of the

program, for the set of execution paths determined by analysis.

Thus, for at least one of these reasons, claim 1 is not anticipated by Ramaswamy

et al.

With respect to claim 16, since Ramaswamy deals with the verification

procedures that a human user would have to go through to obtain access to a particular

program, it does not relate to, or disclose means for ensuring, prior to loading or execution of

an application on the platform, observance or non-observance by the application of the

validity criteria, as recited in the claim. Further, claim 16 is also distinguishable from

Ramaswamy for the reasons discussed above with respect to claim 1.

For at least these reasons, Applicant respectfully submits that claims 1 and 16

are patentable over the prior art of record whether taken alone or in combination as proposed

in the Office Action. Claims 2-15 and 17-18 are believed to be patentable in and of

themselves, and for the reasons discussed above with respect to claims 1 and 16, from which

they depend.

In view of the above amendment and remarks, Applicant respectfully requests

reconsideration and withdrawal of the outstanding rejections of record. Applicant submits

that the application is in condition for allowance and early notice to this effect is most

earnestly solicited.

      If the Examiner has any questions, he is invited to contact the undersigned at

202-628-5197.

                                Respectfully submitted,

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